Neva, Pavlof, and Hoktaheen Sockeye Salmon Stock Assessment. 02-012. 2003 Annual.

Sockeye salmon (*Oncorhynchus nerka*) returns to Neva, Pavlof, and Hoktaheen Lakes have long been an important subsistence resource for Tlingit families living in Hoonah and other areas of northern Southeast Alaska. This annual report summarizes the sockeye stock assessment project findings from the second year, 2003, of a three-year cooperative Hoonah Indian Association, Alaska Department of Fish and Game, and U.S. Forest Service study. This project uses a weir and mark-recapture methods to estimate the sockeye escapement into Neva Lake, a fishpass trap and mark-recapture to estimate the sockeye escapement into Pavlof Lake, and mark-recapture to index the sockeye escapement in Hoktaheen Lake. Age, sex, and length data and limnology data were also collected to help assess the status of these stocks.

The Neva sockeye escapement was 11,393 (CV = 2%) – 9,468 adults and 1,925 jacks – based on weir counts and a weir-to-spawning area mark-recapture study. Sockeye migrated into the lake from June 22 through October 8 and the midpoint of the run was on August 6th. The early running fish spawned in the main inlet stream and the later running fish were beach spawners. Inlet stream spawners totaled about 3,000. Ninety-five percent of the Neva sockeye escapement was age-1.- and 17% were jacks (age -.1). The observed subsistence harvest was 278 sockeye salmon and sport harvest was 53.

The Pavlof sockeye escapement was 1,474 (CV = 2%). The run extended from June 15 to August 12 with a midpoint of July 7. Sixty-nine percent of the sockeye salmon used the fishpass to migrate into the lake. A radio tagging study confirmed that the sockeye spawn in the lower part of the main inlet stream from late-July to mid-August. Age-1.3 fish dominated the escapement.

Three thousand four hundred (CV = 3%) sockeye salmon spawned in upper Hoktaheen Lake's main inlet stream. Just over 300 sockeye spawned in the upper section of the stream connecting the upper and lower lakes. Few spawning sockeye were observed outside of these two index areas. Age-1.3 fish dominated the escapement.

The dominant macrozooplankton was Daphnia sp. in Neva Lake, Bosmina sp. in Pavlof, and Cyclops sp. in Hoktaheen. The weighted "seasonal" biomass of zooplankton was 562, 13, and 463 mg m-2, respectively, in Neva, Pavlof, and Hoktaheen Lakes and euphotic zone depths were 10.6, 6.2, and 3.9.

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